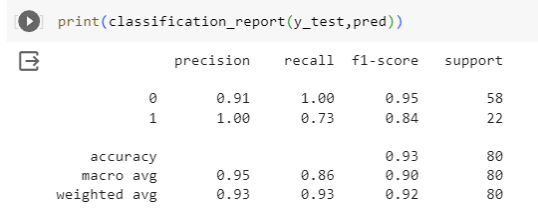
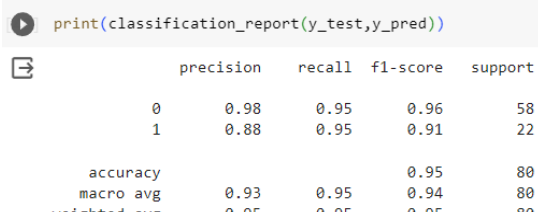
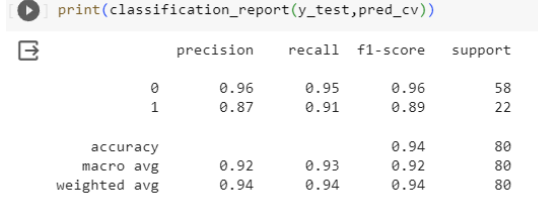
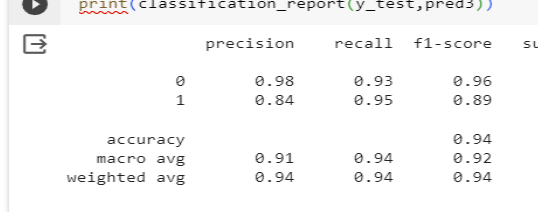


## Project Development Phase Model Performance Test

Date	9 November 2023
Team ID	Team-592312
Project Name	Car Purchase Prediction using ML

### Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No	Parameter	Values	Screenshot
1.	CLASSIFICATION REPORT		
	a)LOGISTIC REGRESSION		
	b) K_nearest neighbors[KNN]		
	c) Decision tree classification		
	d)random forest classification		

	<p>e) Support Vector Machine (SVM) classification</p> <p>f) Naïve Bayes</p>		<pre>print(classification_report(y_test,pred5))</pre> <table><thead><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr></thead><tbody><tr><td>0</td><td>0.97</td><td>0.97</td><td>0.97</td><td>58</td></tr><tr><td>1</td><td>0.91</td><td>0.91</td><td>0.91</td><td>22</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.95</td><td>80</td></tr><tr><td>macro avg</td><td>0.94</td><td>0.94</td><td>0.94</td><td>80</td></tr><tr><td>weighted avg</td><td>0.95</td><td>0.95</td><td>0.95</td><td>80</td></tr></tbody></table> <pre>print(classification_report(y_test,pred6))</pre> <table><thead><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr></thead><tbody><tr><td>0</td><td>0.93</td><td>0.97</td><td>0.95</td><td>58</td></tr><tr><td>1</td><td>0.90</td><td>0.82</td><td>0.86</td><td>22</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.93</td><td>80</td></tr><tr><td>macro avg</td><td>0.92</td><td>0.89</td><td>0.90</td><td>80</td></tr><tr><td>weighted avg</td><td>0.92</td><td>0.93</td><td>0.92</td><td>80</td></tr></tbody></table>		precision	recall	f1-score	support	0	0.97	0.97	0.97	58	1	0.91	0.91	0.91	22	accuracy			0.95	80	macro avg	0.94	0.94	0.94	80	weighted avg	0.95	0.95	0.95	80		precision	recall	f1-score	support	0	0.93	0.97	0.95	58	1	0.90	0.82	0.86	22	accuracy			0.93	80	macro avg	0.92	0.89	0.90	80	weighted avg	0.92	0.93	0.92	80
	precision	recall	f1-score	support																																																											
0	0.97	0.97	0.97	58																																																											
1	0.91	0.91	0.91	22																																																											
accuracy			0.95	80																																																											
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weighted avg	0.92	0.93	0.92	80																																																											
2.	<p>Accuracy</p> <p>a)LOGISTIC REGRESSION</p> <p>b) K_nearest neighbors[KNN]</p> <p>c) Decision tree classification</p> <p>d)random forest classification</p> <p>d) Support Vector</p>	<p>Accuracy =92.5</p> <p>Accuracy =95</p> <p>Accuracy =93.75</p> <p>Accuracy =93.75</p> <p>Accuracy =95</p>	<pre>score1=accuracy_score(y_test,pred) score1</pre> <p>0.925</p> <pre>score=accuracy_score(y_pred,y_test) score</pre> <p>0.95</p> <pre>score_cv=accuracy_score(y_test,pred_cv) score_cv</pre> <p>0.9375</p> <pre>score4=accuracy_score(y_test,pred3) score4</pre> <p>0.9375</p>																																																												

	Machine (SVM) classification		<pre>[91] score5=accuracy_score(y_test,pred5) score5</pre> <p>0.95</p>
	e)Naïve bayes	Accuracy =92.5	<pre>[▶] score7=accuracy_score(y_test,pred6) score7</pre> <p>➞ 0.925</p>

3.	Confidence Score (Only Yolo Projects)	Class Detected - NA  Confidence Score - NA	Not Applicable
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## Screenshot: CLASSIFICATION REPORT

### a)LOGISTIC REGRESSION

▶	<code>print(classification_report(y_test,pred))</code>				
➞		precision	recall	f1-score	support
	0	0.91	1.00	0.95	58
	1	1.00	0.73	0.84	22
	accuracy			0.93	80
	macro avg	0.95	0.86	0.90	80
	weighted avg	0.93	0.93	0.92	80

## b) K\_nearest neighbors[KNN]

```
print(classification_report(y_test,y_pred))
```

	precision	recall	f1-score	support
0	0.98	0.95	0.96	58
1	0.88	0.95	0.91	22
accuracy			0.95	80
macro avg	0.93	0.95	0.94	80
weighted avg	0.95	0.95	0.95	80

## c) Decision tree classification

```
print(classification_report(y_test,pred_cv))
```

	precision	recall	f1-score	support
0	0.96	0.95	0.96	58
1	0.87	0.91	0.89	22
accuracy			0.94	80
macro avg	0.92	0.93	0.92	80
weighted avg	0.94	0.94	0.94	80

## d)random forest classification

```
print(classification_report(y_test,pred3))
```



	precision	recall	f1-score	support
0	0.98	0.93	0.96	58
1	0.84	0.95	0.89	22
accuracy			0.94	80
macro avg	0.91	0.94	0.92	80
weighted avg	0.94	0.94	0.94	80

## e) Support Vector Machine (SVM) classification

```
print(classification_report(y_test,pred5))
```


	precision	recall	f1-score	support
0	0.97	0.97	0.97	58
1	0.91	0.91	0.91	22
accuracy			0.95	80
macro avg	0.94	0.94	0.94	80
weighted avg	0.95	0.95	0.95	80


## f) Naïve Bayes

	<code>print(classification_report(y_test,pred6))</code>				
		precision	recall	f1-score	support
	0	0.93	0.97	0.95	58
	1	0.90	0.82	0.86	22
	accuracy			0.93	80
	macro avg	0.92	0.89	0.90	80
	weighted avg	0.92	0.93	0.92	80

## Accuracy


### a) LOGISTIC REGRESSION


```
 score1=accuracy_score(y_test,pred)
score1
```

 0.925

Accuracy =92.5


### b) K\_nearest neighbors[KNN]


```
 score=accuracy_score(y_pred,y_test)
score
```

 0.95

Accuracy =95

### c) Decision tree classification

```
 score_cv=accuracy_score(y_test,pred_cv)
score_cv
```

 0.9375

Accuracy =93.75

d)random forest classification

```
▶ score4=accuracy_score(y_test,pred3)  
score4
```

```
⇒ 0.9375
```

Accuracy =93.75

d) Support Vector Machine (SVM) classification

```
[91] score5=accuracy_score(y_test,pred5)  
score5
```

```
0.95
```

Accuracy =95

e)Naïve bayes

```
▶ [ score7=accuracy_score(y_test,pred6)  
score7
```

```
⇒ 0.925
```

Accuracy =92.5

